UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,899	03/05/2002	Faraydon O. Karim	01-LJ-014	6516

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EXAMINER
FERRIS, DERRICK W

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/090,899	KARIM, FARAYDON O.
	Examiner	Art Unit	
	Derrick W. Ferris	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *18 May 2006*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *21-25* is/are allowed.

6) ☒ Claim(s) *1-4,7,9-12,15 and 17-20* is/are rejected.

7) ☒ Claim(s) *5,6,8,13,14 and 16* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   This Office action is in response to applicant's paper filed 5/18/2006. **Claims 1-26** as amended are still in consideration for this application. Applicant has added claim 26.

2.   Examiner **withdraws** the claim objection(s). Examiner thanks applicant for making the necessary corrections.

3.   Examiner **withdraws** the obviousness rejection to *Hermann* in view of *Kalman* and corresponding rejections. The following comments fully address applicant's arguments with respect to the rejection. Applicant's arguments filed 5/18/2006 have been fully considered but they are not persuasive. In particular, *Hermann* teaches that a mesh connection (i.e., a cross data link) is between two non-adjacent nodes, see e.g., column 3, lines 45-50. *Hermann* also teaches that more than one type of mesh configuration may be used, see e.g., column 4, lines 16-21. Thus *Hermann* teaches at least four cross data links in addition to other possible types of cross connects. However, the examiner will agree that the other types of mesh configurations may not explicitly be taught by the reference. As such, the examiner has provided an additional reference that teaches that other mesh configurations are possible. One skilled in the art would further recognize that the purpose of the mesh configuration is to limit the number of hops in a network. The examiner notes that the concept of exactly four crossing data links further appears to be non-limiting by applicant's admission in filing newly added claim 26 which does not specifically recite the exact number of crossing data links.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5.   **Claim 26** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, no support was found in applicant's specification with respect to an *even number greater than two* of the switching circuits. In particular, applicant's specification teaches eight switching circuits. In addition, the examiner notes that the further teaching of a <u>four node</u> ringed network connected in a full mesh reads on applicant's claim 26 yet may *teaches away* from applicant's specification at pages 6-7 since this creates a full mesh. Thus it appears that applicant's invention clearly does not support the proposed newly added claim 26 since neither two nor four node configurations are possible thus demonstrating that applicant was not in possession of the above claim recitation at issue at the time the application was filed.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 1, 2, 3, 4, 7, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,848006 B1 to *Hermann* in view of U.S. Patent No. 6,865,149 B1 to *Kalman et al.* ("*Kalman*") in further view of U.S. Patent No. 5,940,367 A to *Antonv*.

As such to **claim 1**, *Hermann* discloses e.g., in figure 1 switching circuits A-E

capable of transferring data packets with each other. *Hermann* also teaches sequential

data links bidirectionally coupling said switching circuits in sequence to thereby form a

ring configuration as the BLSR ring 11,13, see e.g., column 3, lines 45-67. Further

taught are four crossing rings as part of the mesh network. In particular, it is understood

that connection 2 (i.e., the mesh connection) is by way of example, and that other nodes

may be equally directly connected, see e.g., column 4, lines 17-21.

Hermann is silent or deficient to the further limitation 8 switching circuits and 8

sequential data links thus teaching an octagonal ring configuration. In particular, the

example illustrated in figure 1 is for a five node network.

Kalman teaches the further recited limitation above at e.g., figure 2a.

The proposed modification of the above-applied reference(s) necessary to arrive

at the claimed subject matter would be to modify *Hermann* by clarifying that it would

have been obvious to use 8 nodes instead of 5 nodes.

As such, examiner notes that it would have been obvious to one skilled in the art

prior to applicant's invention to include the above limitation. In particular, the motivation

for modifying the reference or to combine the reference teachings would be to

communicate with more nodes on the ringed network. In particular, *Kalman* cures the

above-cited deficiency by illustrating that more than five nodes are used on a ringed

network. Second, there would be a reasonable expectation of success since both

references teach BLSR, see e.g., column 2, lines 17-26.

Hermann and *Kalman* may be silent or deficient to the further limitation of only

four crossing data links. In particular, *Hermann* teaches that a mesh connection (i.e., a

cross data link) is between two non-adjacent nodes, see e.g., column 3, lines 45-50.

Hermann also teaches that at least more than one type of mesh configuration may be

used, see e.g., column 4, lines 16-21.

Antonov in combination teaches the further recited limitation above at e.g., figure

1b labeled prior art and at column 1, lines 4-37 (i.e., *Antonov* teaches the concept that

partial mesh networks are well known in the art). In particular, note that not every node

is connected to every other node creating a full mesh.

The proposed modification of the above-applied reference(s) necessary to arrive

at the claimed subject matter would be to modify *Hermann* and *Kalman* by clarifying that

it would have been obvious to use only four crossing data links.

As such, examiner notes that it would have been obvious to one skilled in the art

prior to applicant's invention to include the above limitation. In particular, the motivation

for modifying the reference or to combine the reference teachings would be to reduce

costs in implementing the number of links between nodes as well as complexity. In

particular, *Kalman* cures the above-cited deficiency by illustrating different bypass

configurations are well known in the art.

As to **claim 2**, see e.g., figure 1a of *Hermann* where the hop distance from node a

to node d is two hops based on the meshed link 2.

As to **claim 3**, see e.g., figure 2a of *Kalman* which shows the nodes labeled from nodes 0-7. Examiner notes the same motivation applies as the rejection for the based claim.

As to **claim 4**, each node is capable of processing the data packets by at least determining whether the packet traverses the working or protecting links.

As to **claim 7**, see similar rejection to claim 2.

As to **claim 26**, see similar rejection to claim 1.

8.   **Claims 9-12, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,848006 B1 to *Hermann* in view of U.S. Patent No. 6,865,149 B1 to *Kalman et al.* ("*Kalman*"), U.S. Patent No. 6,111,859 to *Godfrey et al.* ("*Godfrey*") in further view of U.S. Patent No. 5,940,367 A to *Antonv*.

As to **claim 9**, see similar rejection to claim 1 with respect to the *Hermann* and *Kalman* references.

Both *Hermann* and *Kalman* are silent or deficient to implementing the interconnect network on a system-on-chip (SOC) device.

Godfrey teaches the above motivation at e.g., column 3, lines 30-49.

Thus the examiner proposes to clarify the above rejection that it is well known in the art to implement an interconnect network on a system-on-chip (SOC) device.

Hence the examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to implement a SOC device. In particular, one skilled in the art would have been motivated to use a SOC device as part of a design choice. A further motivation would be to utilize a generic method for interconnecting multiple module

types on a single computer chip. As such, *Godfrey* teaches the above motivation at e.g., column 3, lines 47-49.

Hermann, Kalman and *Godfrey* may be silent or deficient to the further limitation of only four crossing data links. In particular, *Hermann* teaches that a mesh connection (i.e., a cross data link) is between two non-adjacent nodes, see e.g., column 3, lines 45-50. *Hermann* also teaches that at least more than one type of mesh configuration may be used, see e.g., column 4, lines 16-21.

Antonov in combination teaches the further recited limitation above at e.g., figure 1b labeled prior art and at column 1, lines 4-37 (i.e., *Antonov* teaches the concept that partial mesh networks are well known in the art). In particular, note that not every node is connected to every other node creating a full mesh.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Hermann, Kalman* and *Godfrey* by clarifying that it would have been obvious to use only four crossing data links.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to reduce costs in implementing the number of links between nodes as well as complexity. In particular, *Kalman* cures the above-cited deficiency by illustrating different bypass configurations are well known in the art.

As to **claim 10**, see similar rejection to claim 2.

As to **claim 11**, see similar rejection to claim 3.

As to **claim 12**, see similar rejection to claim 4.

As to **claim 15**, see similar rejection to claim 7.

9.   **Claims 17-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent

No. 6,848006 B1 to *Hermann* in view of U.S. Patent No. 6,865,149 B1 to *Kalman et al.*

("*Kalman*"), U.S. Patent No. 6,111,859 to *Godfrey et al.* ("*Godfrey*") and U.S. Patent No.

5,390,164 A to *Kremer* in further view of U.S. Patent No. 5,940,367 A to *Antonv.*

As to **claim 17**, see similar rejection to claim 9 with respect to the *Hermann,*

Kalman, and *Godfrey* references.

Hermann, Kalman, and *Godfrey* may be silent or deficient to a first

interconnection network and a second interconnection network. In particular, the above

references teach at least one interconnection network.

Kremer teaches the above limitation in e.g., figure 1.

Thus the examiner proposes to clarify the above rejection that it is well known in

the art to have at least two interconnection networks.

Hence the examiner notes that it would have been obvious to one skilled in the art

prior to applicant's invention to use two interconnection networks for transferring data

packets between first selected ones of said plurality of processing nodes. In particular,

one skilled in the art would have been motivated to have at least to interconnection

networks to communicate on two separate networks. As such, *Kremer* teaches the above

motivation in e.g., figure 1.

Hermann, Kalman, Kremer and *Godfrey* may be silent or deficient to the further

limitation of only four crossing data links. In particular, *Hermann* teaches that a mesh

connection (i.e., a cross data link) is between two non-adjacent nodes, see e.g., column 3, lines 45-50. *Hermann* also teaches that at least more than one type of mesh configuration may be used, see e.g., column 4, lines 16-21.

Antonov in combination teaches the further recited limitation above at e.g., figure 1b labeled prior art and at column 1, lines 4-37 (i.e., *Antonov* teaches the concept that partial mesh networks are well known in the art). In particular, note that not every node is connected to every other node creating a full mesh.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Hermann, Kalman, Kremer* and *Godfrey* by clarifying that it would have been obvious to use only four crossing data links.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to reduce costs in implementing the number of links between nodes as well as complexity. In particular, *Kalman* cures the above-cited deficiency by illustrating different bypass configurations are well known in the art.

As to **claim 18**, see similar rejection to claim 2.

As to **claim 19**, see similar rejection to claim 2.

As to **claim 20**, see e.g., figure 1 with respect to a shared node. The examiner notes the same motivation as mentioned in the rejection for the base claim.

Allowable Subject Matter

10.   **Claims 21-25** are allowed.

11.   **Claims 5, 6, 8, 13, 14, and 16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.
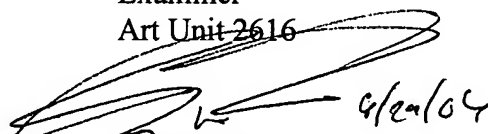
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571)272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Derrick W. Ferris
Examiner
Art Unit 2616

DWF

DERRICK FERRIS
PATENT EXAMINER